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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,511	03/02/2004	Jong-Hoon Shin	8021-203 (SS-19469-US)	2746
22150 7590 05/15/2007 F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			EXAMINER SUN, SCOTT C	
			ART UNIT 2182	PAPER NUMBER
			MAIL DATE 05/15/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,511	SHIN ET AL.	
	Examiner	Art Unit	
	Scott Sun	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment to the claims filed 2/28/2007 has been noted and received. Previous rejections under 35 U.S.C 112 are withdrawn.

Response to Arguments

2. Applicant's arguments filed 2/28/2007 have been fully considered but they are not persuasive. Applicant's arguments are summarized as:
 - a. In contrast to the claimed invention, prior art of record, APA and Bilak, discloses separate receive and transmit memories.
 - b. Prior art of record, Bilak, does not disclose threshold control signal for controlling memory allocation.
 - c. Prior art of record, Bilak, does not disclose generating transmission and reception execution signals according to received data.
3. In response to argument 'a', examiner notes that the claims do not preclude the transmitting area and receiving areas being separate. Merely stating that the transmitting and receiving areas perform "flexible" memory allocation does not limit the relative locations of the two areas. Even if the claims recite that the two areas are not separate, there is no clarification of what is considered a separation (for example, hardware or software (logical separation), on same chip, etc). If applicant believes such

features are present in the specification, it is recommended that these features be clearly stated in the claims, as although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. In response to argument 'b', examiner notes that Bilak teaches that the R_RDY signals is used to calculate the buffer-to-buffer credit, which determines if there are enough space in the respective receive and transmit buffers (paragraph 35-37). If a respective buffer is determined to not have enough space, then that buffer can be allocated more space from the other buffer (see figure 3). Examiner equated the R_RDY signal to the threshold signal of the claims because R_RDY signal caused a determination that additional space is to be allocated, as stated in the claims.

Alternatively, the test result of step 370 (figure 3) can also be viewed as the threshold signal as following the determination, more space is allocated. In either case, examiner notes that because Bilak determines if a particular buffer has enough space (reached a threshold) and if not, allocates space subsequently, there is a threshold signal present to control the allocation.

5. In response to argument 'c', examiner notes that previous office action clearly states that Bilak shows the reception and transmission steps being performs after determining that the corresponding data has arrived (step 630 in figure 5, step 330 in figure 3). Bilak further shows that the inbound buffer (receive area) receives data from physical interface (lower layer) and outbound buffer (transmit area) receives data from

the system bus (figure 1). The result of the waiting steps 630 and 330 are clearly used as signal to process data from the respective inbound and outbound buffers.

6. Having responded to each of applicant's arguments, examiner notes that previous grounds of rejection are still valid and is attached below with minor changes made to reflect the amended claims.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (APA) in view of Bilak et al (PG Pub #2003/0177293).

9. Regarding claim 1, APA discloses a transceiving network controller (system in figure 1) comprising:

a system bus (system bus);

a buffer memory (transmitting memory 110, receiving memory 130) including a transmitting area (transmitting memory 110) and a receiving area (receiving memory 130), the buffer memory for storing and outputting transmitted data in response to at least one transmitting address signal (signals "TWDT", TRDT", "TWAD"... etc) and for storing and outputting received data in response to at least one receiving addressing signal (signals "RREN", RWEN", "RRAD"... etc; background, page 2, lines 1-11).

a transmitting controller (transmitting controller 120) for generating a plurality of transmitting address signals (signals "TWDT", TRDT", "TWAD"... etc), for outputting at least one transmitting write address signal (signals "TWDT", "TWAD", TWEN") of the plurality of transmitting address signals with data (SYSTD) received from the system bus (page 2, lines 6-7), and for outputting transmitted data output from the buffer memory to a lower layer (physical layer; page 2, lines 7-8), the transmitted data being output from the buffer memory in response to at least one transmitting read address signal (signals "TRDT", "TRAD", "TREN") of the plurality of transmitting address signals (page 2, lines 6-8, also shown in figure 1).

a receiving controller for generating a plurality of receiving address signals (signals "RREN", RWEN", "RRAD"... etc), for outputting at least one receiving write address signal (signals "RRDT", "RRAD", RREN") of the plurality of receiving address signals with data (PHYRD) received from the lower layer (physical layer, page 2, lines 8-10), and for outputting received data output from the buffer memory to the system bus (page 2, lines 10-11), the received data being output from the buffer memory in response to at least one receiving read address signal (signals "RWDT", "RWAD", "RWEN") of the plurality of receiving address signals (page 2, lines 8-11, also shown in figure 1).

APA does not disclose explicitly a flow control unit. However, Bilak discloses a flow control unit (processing thread 120, figure 2; paragraph 28, 35) for generating and outputting threshold control signals (R-RDY signals) for increasing the memory allocation of the transmitting area (outbound buffer) when a transmission execution

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signal (data frame ready for transmission 630) becomes active (paragraph 39), and for increasing the memory allocation of the receiving area (inbound buffer) when a reception execution signal (arrival of data frame 330) becomes active (paragraph 37), and a maximum transmitting address (maximum capacity of the outbound buffer) and a maximum receiving address (maximum capacity of the inbound buffer) being changed by the threshold control signals (paragraph 35). Examiner notes that Bilak teaches that the inbound and outbound buffer areas can each “borrow” space from each other when overloaded (paragraph 33). This is analogous to the “flexible memory allocation” as claimed. Furthermore, teachings of APA and Bilak are from the same field of data buffering and flow controlling.

Therefore, it would have been obvious at the time of invention for a person of ordinary skill in the art to combine teachings of Bilak and APA by using the buffer space “borrowing” logic disclosed by Bilak in the system disclosed by APA for the benefit of efficient use of buffer space (paragraph 26, 33, Bilak).

10. Regarding claim 2, APA and Bilak combined disclose claim 1, and Bilak further discloses wherein the flow control unit generates a threshold control signal (“no” result returned from test 350 or test 660) for maintaining the memory allocation (space is not borrowed) of the transmitting area and the receiving area when the transmission executions signal and the reception execution signal becomes active simultaneously (when neither buffer areas have more space, or equivalently, when both buffer areas are being fully utilized).

11. Regarding claim 3, APA and Bilak combined disclose claim 1, and Bilak further discloses wherein the flow control units generates a threshold control signal (de-allocation signal) for equalizing the memory allocation of the transmitting area and the receiving area (paragraph 34, 38). Examiner notes that both buffer areas initially have 64 blocks (paragraph 34); blocks "borrowed" by another buffer are returned to the original buffer after use, and therefore equalizing the memory allocation of the two buffer areas.

12. Regarding claim 4, APA and Bilak combined disclose claim 1, and Bilak further discloses wherein the flow control units generates a threshold control signal for maintaining the memory allocation of the transmitting area and the receiving area at a predetermined threshold in accordance with a predetermined setting (paragraph 34, 38). Similar to claim 3, examiner notes that spaces "borrowed" by another buffer are returned to the original buffer after use, and therefore maintaining the memory allocation of the two buffer areas to the original setting.

13. Regarding claim 5 and 6, APA and Bilak combined disclose claim 1, and APA further discloses that the transmitted and received data area transmitted using a half or full duplex method (page 2, lines 11-12).

14. Regarding claims 7-18, examiner notes that limitations of these claims are substantially similar to those in claims 1-6 above, and therefore the same grounds of rejection are applied. Regarding claim 9, examiner notes that Bilak discloses that both buffers are initially empty (shown in figures 3 and 5) and equal in size (paragraph 34) therefore equalized when power is turned on.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Sun whose telephone number is (571) 272-2675. The examiner can normally be reached on M-F, 10:30am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS



KIM HUYNH
SUPERVISORY PATENT EXAMINER

5/11/07